

## II. AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently Amended) A system for dynamically implementing a chain of Web services from a client on the World Wide Web to execute a workflow, comprising:

a database for storing a list of available Web services, wherein each listed Web service includes a description of a task performed by the Web service, and wherein the Web service comprises a computer program accessible over the World Wide Web, and an input signature and an output signature of the Web service; and

a selecting system for forming the chain of Web services by selecting a Web service from the list of available Web services for each of a plurality of tasks in the workflow, wherein the workflow comprises a series of linked tasks and a specified input and output format, wherein the selecting system dynamically matches the input signature of a first Web service with the output signature of an adjacent Web service to ensure that each selected Web service is compatible with the adjacent Web service in the chain of Web services.

2. (Original) The system of claim 1, wherein the workflow comprises a microarray analysis workflow.

3. (Original) The system of claim 1, further comprising a workflow generator for creating the workflow.
4. (Original) The system of claim 1, wherein the list of available Web services resides locally with the client.
5. (Original) The system of claim 1, further comprising a system for collecting and storing available Web services data.
6. (Original) The system of claim 1, further comprising a system for inputting sequence data into the workflow execution.
7. (Currently Amended) The system of claim 1, wherein ~~the workflow includes a specified input and output format~~ the input signature comprises a FASTA XML format for a set of input sequences and the output signature comprises an XML file format for providing spatial microarray placement data.
8. (Currently Amended) A program product, stored on a recordable medium for executing a workflow by dynamically implementing Web services from a client on the World Wide Web, comprising:

means for storing a list of available Web services, wherein each listed Web service includes a description of a task performed by the Web service, and an input signature and an output signature of the Web service; and

means for forming a chain of Web services by selecting a Web service from the list of available Web services for each of a plurality of tasks in the workflow, wherein the workflow comprises a series of linked tasks and a specified input and output format, wherein the forming means dynamically matches the input signature of a first Web service and the output signature of an adjacent Web service to ensure that each selected Web service is compatible with the adjacent Web service in the chain of Web services.

9. (Original) The program product of claim 8, wherein the workflow comprises a microarray analysis workflow.

10. (Original) The program product of claim 8, wherein the workflow comprises a bioinformatics workflow.

11. (Original) The program product of claim 8, further comprising means for creating the workflow.

12. (Original) The program product of claim 8, wherein the storage means resides locally with the client.

13. (Original) The program product of claim 12, further comprising means for collecting and storing available Web services data in said storage means.
14. (Original) The program product of claim 8, further comprising a system for inputting sequence data into the workflow execution.
15. (Currently Amended) The program product of claim 8, wherein ~~the workflow includes a specified input and output format~~ the input signature comprises a FASTA XML format for a set of input sequences and the output signature comprises an XML file format for providing spatial microarray placement data.
16. (Currently Amended) A method for executing a bioinformatics workflow from a client on the World Wide Web, comprising:
- providing a workflow having a plurality of linked tasks and a specified input and output format;
  - providing a list of known bioinformatics Web services, wherein each listed Web service includes a description of a task performed by the Web service, and an input signature and an output signature of the Web service, further wherein the Web service comprises a computer program accessible over the World Wide Web;
  - selecting a Web service from the list of known bioinformatics Web services for each task in the bioinformatics workflow to form a chain of Web services, wherein the

selecting step dynamically matches the input signature of a first Web service with the output signature of an adjacent Web service to ensure that each selected Web service is compatible with the adjacent Web service in the chain of Web services; and

calling each selected Web service in the chain to execute the bioinformatics workflow.

17. (Original) The method of claim 16, wherein the bioinformatics workflow comprises a microarray analysis.

18. (Original) The method of claim 16, wherein the list of known bioinformatics Web services resides locally to the client.

19. (Currently Amended) The method of claim 16, wherein ~~the workflow includes a specified input and output format~~ the input signature comprises a FASTA XML format for a set of input sequences and the output signature comprises an XML file format for providing spatial microarray placement data.

20. (Original) The method of claim 19, wherein the step of calling each selected Web service includes the step of providing a set bioinformatics data to a first Web service in the chain in the specified input format.